# Project Components

## What are the preservation components of the Proposed Action?

The preservation portion of the Proposed Action would replace the ferry terminal components that are at or beyond their design life with new structures built to current design standards. These components were determined based on an assessment of the Life Cycle Cost Model (LCCM), maintenance requests from WSF's Maintenance and Production Enhancement Tool (MPET) database, terminal inspection reports, and site visits. The following components would be replaced as part of the preservation portion:

- Dolphins
- Wingwalls
- Transfer spans
- Tower and headframes

Because some of these components need to be replaced with new structures now, they are also included as part of the No Build alternative. These components are discussed in more detail below:

### Dolphins

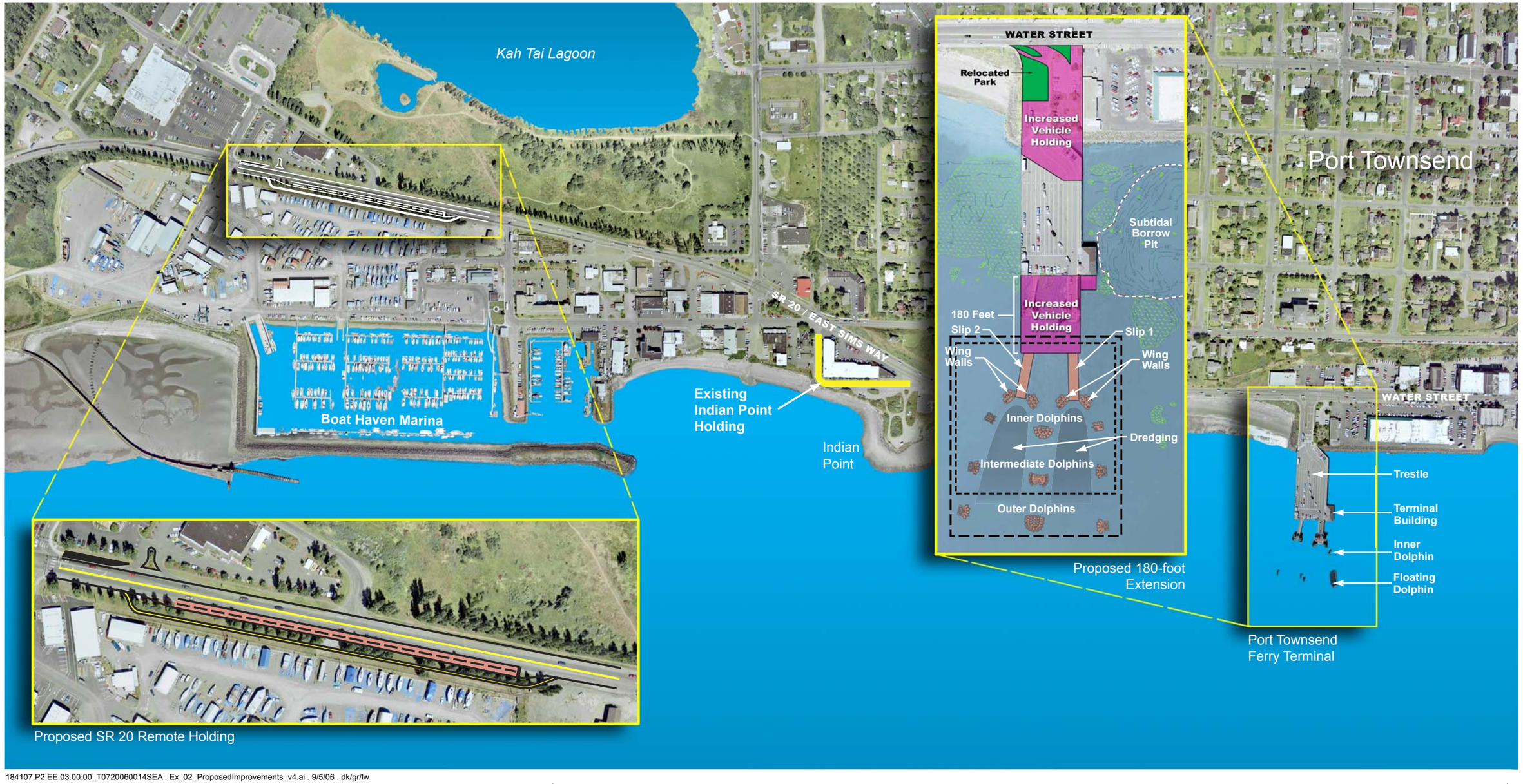
The ferry terminal has two boat slips, the main slip (Slip 1) and the tie-up slip (Slip 2) (Photo 1). The existing dolphins that help guide the ferries into their berths are of two types, creosote-treated timber pile clusters and floating creosote-timber and steel-tank. All the dolphins are at or beyond their useful design life. To conform to current design standards, these dolphins would be replaced with steel dolphins, which would provide more durable and reliable berthing structures. The outer dolphins are vessel dependent and thus would only be built if the 100-car or 124- to 144-car vessel were selected. Exhibit 2 identifies the dolphins to be replaced and the vessel-dependent landing slip variations.

Slip 1 (the main slip) has three dolphins:

- Left inner dolphin (Photo 2) – This is a 70-pile creosote-treated timber-cluster dolphin that would be replaced with a 9-pile steel dolphin.
- Left outer dolphin (Photo 2) – This is a floating-timber dolphin that would be replaced with a left intermediate and left outer dolphin. Both dolphins would be 13-pile steel berthing structures. The outer dolphin is vessel dependent.
- Right outer dolphin (Photo 3) – This is a 70-pile creosote-treated timber-cluster dolphin that would be replaced with double-sided steel dolphins. These berthing structures include 15-pile inner, 19-pile intermediate, and 25-pile outer double-sided dolphins. The outer dolphin is vessel dependent.

*Photo 1: Slip 2 shown on left and Slip 1 shown on right*

*Photo 2: Existing Slip 1 left inner dolphin and left outer floating dolphin*

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**LEGEND**

- **Improvement Project**
- **Preservation Project**

**VESSEL-DEPENDENT LANDING SLIP VARIATIONS**

- 65-vehicle Ferry Improvements (Inner and Intermediate Dolphins)
- 100-vehicle Ferry Improvements (Inner, Intermediate, and Outer Dolphins)
- 124-144-vehicle Ferry Improvements (Inner, Intermediate, and Outer Dolphins plus Dredging)

N

0 150 300 Feet

Exhibit 2
**Existing Terminal and Proposed Improvements**

*Photo 3: Existing Slip 1 right outer dolphin and Slip 2 left outer dolphin*

Slip 2 (tie-up slip) has two dolphins:

- Left outer dolphin (Photo 3) – This is a 51-pile creosote-treated timber-cluster dolphin that would be replaced with the double-sided steel dolphin. These berthing structures include 15-pile inner, 19-pile intermediate, and 25-pile outer double-sided dolphins that also serve as Slip 1's right outer dolphin. The outer dolphin is vessel dependent.
- Right outer dolphin – This is a 51-pile creosote-treated timber-cluster dolphin. This dolphin would be replaced with steel berthing structures, which would include 9-pile inner, 13-pile intermediate and 13-pile outer dolphins. The outer dolphin is vessel dependent.

The proposed dolphin replacement program is summarized in Exhibit 3.

EXHIBIT 3. DOLPHIN REPLACEMENT PROGRAM

| Existing Dolphins | Proposed Dolphins |
|---|---|
| Slip 1 left inner dolphin | Replace with 9-pile steel inner dolphin. |
| Slip 1 floating dolphin | Replace with 13-pile steel intermediate and outer dolphins (outer dolphin is vessel dependent). |
| Slip 1 right outer dolphin 1[a] | Replace with double-sided 15-pile steel inner, 19-pile intermediate, and 25-pile outer dolphins (outer dolphin is vessel dependent). |
| Slip 2 left outer dolphin 1[a] | Replace with double-sided intermediate dolphin (to be shared with Slip 1) |
| Slip 2 right outer dolphin | Replace with 9-pile steel inner, 13-pile intermediate, and 13-pile outer dolphins (outer dolphin is vessel dependent). |

[a] The existing Slip 1 right outer dolphin and Slip 2 left outer dolphin are back-to-back timber dolphins, and will be replaced with one double-sided, intermediate, steel dolphin.

Over 26,000 linear feet of creosote timber pilings used for the dolphins, wingwalls, and towers (about 410 piles in total) would be removed and replaced with 161 steel piles. The existing piles would be extracted and the new piles would be driven into the ground with a vibratory hammer. Depending on the soil conditions, some piles may be "proofed" with an impact hammer to ensure their load-bearing capacity.

## Wingwalls

The existing wingwalls for both slips are constructed of creosote-treated timber. The Slip 1 wingwalls (Photo 4) are past their useful design life, and the Slip 2 wingwalls (Photo 5) underwent emergency repair in 2004 and were replaced with steel wing-dolphins (light duty wingwalls for tie-up slip use). Both sets of wingwalls would be replaced with steel wingwalls and would be constructed to current design standards.

## Transfer Spans and Aprons

The existing transfer span at Slip 1 (Photo 6) is a plate-girder design and at Slip 2 (Photo 7) is a truss. The transfer span and apron at both slips would be replaced with new hydraulically-actuated transfer span systems. Each transfer span would be operated using a hydraulic lift cylinder. This system design has a caisson and lift cylinder that would eliminate the need for towers and a headframe, creating a less cluttered view of the Sound.

*Photo 4: Slip 1 wingwalls, left inner dolphin, and floating dolphin*

*Photo 5: Wing-dolphins at Slip 2*


*Photo 6: Existing Slip 1 plate girder transfer span, towers, and headframe*


*Photo 7: Existing Slip 2 truss transfer span, towers, and headframe*

## What are the improvement components of the Proposed Action?

The improvement portion of the Proposed Action consists of improving the terminal's holding capacity and amenities so that the facility can continue to serve the riders of the Port Townsend-Keystone ferry route with reliable public transportation. These components were determined based on an analysis of traffic demand and WSF operations. The following components are part of the improvement portion of the Proposed Action:

- Extend the existing trestle off-shore to provide additional holding capacity while reducing impacts on eelgrass.
- Increase the holding area capacity to reduce queuing on SR 20, including a new remote holding area.
- Modify the terminal layout and traffic flow to improve efficiency.
- Dredge off-shore to accommodate new vessels (necessary for the 124- to 144-car vessel only).
- Provide stormwater treatment to improve existing conditions.
- Incorporate other environmental improvements.

Because of the expected loss of the existing Indian Point remote holding area in the next few years, the new remote holding area is also included in the No Build Alternative.